

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 89-105

UPDATED WASTE DISCHARGE REQUIREMENTS AND RESCISSION OF ORDER NOS. 78-3 AND 81-14 FOR:

CITY OF SUNNYVALE AND OAKLAND SCAVENGER COMPANY
CLASS III SOLID WASTE DISPOSAL SITE
SUNNYVALE, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

1. The Sunnyvale Landfill is owned by the City of Sunnyvale (hereinafter called the City) and is currently operated by the City in conjunction with the Oakland Scavenger Company (hereinafter collectively referred to as the discharger). The landfill is located on 93 acres on both sides of the northern extremity of Borregas Avenue in Sunnyvale, Santa Clara County. The discharger submitted a Report of Waste Discharge, dated April 1, 1988 for purposes of update of their current Waste Discharge Requirements. The Sunnyvale Landfill is currently regulated by Waste Discharge Requirements Order No. 78-3 as amended by Order No. 81-14. This Order is an update of existing requirements in conformance with Title 23, California Code of Regulations (CCR), Chapter 3, Subchapter 15 (hereinafter called Subchapter 15). The project site is shown on Attachment A, which is incorporated herein and made a part of this Order.
2. The landfill has primarily accepted only municipal, commercial, and industrial solid wastes. It is believed to have first received wastes in the 1920's. The landfill was privately owned until the City obtained portions of the site during the period from 1941 through 1983. Prior to landfill operations, the ground surface was a flat, bayward sloping plain at or near mean sea level (MSL).
3. The site was first permitted for operation as a sanitary landfill in 1978 by Board Order No. 78-3. At that time, fill had taken place in six fill areas (hills) with a total footprint of approximately 78 acres. Five valleys existed between these fill areas. Various utilities exist or existed in these valleys. The landfill was anticipated to close in 1982, but has remained open due to a combination of waste diversion to another landfill, and in-filling of two of the five valleys.
4. The landfill is currently composed of four fill areas separated by three valleys containing buried or surface utilities. Based on a slope stability analysis prepared in February, 1988 titled "Landfill Slope Stability Analysis" (cited in Finding 19 of this Order), the discharger proposes to raise the final grade of the landfill from the currently permitted height of 60 feet to 131 National Geodetic Vertical Datum (NGVD) for the easternmost hill, and 111 NGVD for the westernmost hill. The discharger also proposes to fill the easternmost of these valleys, known as Fill Area H, and have considered filling the valley through where the

West Sunnyvale Channel currently flows. A 39 inch sanitary sewer line currently runs through portions of Fill Area H. Filling of these two valleys was not a part of the grading plan for closure included with the closure plan that was adopted by Order No. 81-14, amendment to the Waste Discharge Requirements.

5. The discharger is not likely to actually pursue filling to the height of 131 for the easternmost hill, unless it becomes apparent that the transfer station, proposed to be located adjacent to the landfill, will not be completed on schedule. Providing the transfer station is completed on time, the discharger anticipates filling to a maximum height of 111 NGVD.
6. The discharger proposes to continue accepting for disposal non-hazardous municipal, commercial, and industrial solid wastes within the previously permitted area. Remaining capacity in the landfill is approximately two million cubic yards. The remaining lifetime in years depends on the rate of refuse disposal, which may be variable in the future due to accommodation of both the City's and neighboring communities landfill needs.
7. Features in the immediate vicinity of the landfill include the City's Water Pollution Control Plant and associated sludge lagoons, two Leslie Salt Company ponds, a curbside recycling yard, a leased industrial recycling area, the future refuse transfer station site, and two permanent pump stations known as the Baylands and the Lockheed Pump Stations. The landfill is bordered by open space on its east, north, and west perimeters. Commercial office buildings are located along the entire southern perimeter. These buildings are separated from the landfill by a four lane road.
8. Surface waters within and on the margins of the landfill include the East and West Sunnyvale Channels, the Lockheed Channel, and the Moffett Field Channel. The Lockheed Channel receives surface runoff from the landfill. The remainder of landfill surface runoff drains to unnamed surface ditches which are tributary to the Guadalupe Slough by means of the Lockheed and Baylands Pump Stations. The Guadalupe Slough is located beyond the salt evaporator ponds just to the north of the landfill.
9. The landfill site is located adjacent to the San Francisco Bay on part of the extensive Santa Clara Valley alluvial basin which is composed of interfingering alluvial fan and bay mud deposits. The landfill is underlain by low to high plasticity clays and silts interbedded with sandy lenses and layers. The depth to bedrock at the site is estimated to be several hundred feet.
10. The water table below the site is found near the original ground surface. Groundwater flow beneath the site has been classified into three water bearing zones: shallow, intermediate, and deep. The shallow unit contains a relatively continuous sand zone which occurs from within several feet to approximately fifteen feet below the fill. This sand zone varies in thickness from one to five feet. The intermediate unit consists of sandy clay or clayey sand to well-graded gravel between an elevation of -18 and -35 feet MSL. The average thickness is estimated to be five feet and the unit may be laterally discontinuous. The deeper sand zone is encountered beneath selected areas of the site, ranging in thickness from

two feet to more than thirty feet. Liquid is also present within the refuse fill, above the elevation of the above described shallow unit.

11. Groundwater monitoring wells at the site currently monitor water quality primarily in the shallow sand zone. Two groundwater monitoring wells destroyed during landfill construction have not been properly abandoned. Shallow groundwater at the site is generally saline in character due to its proximity to the San Francisco Bay and the salt evaporator ponds. Wells located offsite within one mile of the site are used for groundwater monitoring, and municipal and industrial water supply.
12. The discharger submitted a Solid Waste Assessment Test Report (SWAT) on July 1, 1987 pursuant to Section 13273 of the Water Code. The SWAT is designed to establish whether there has been any leakage of hazardous waste from solid waste disposal facilities to the nearby soils, the vadose zone, or waters of the State. Results of this investigation and subsequent verification monitoring indicate the presence of several volatile organic compounds (VOC's) in concentrations just above the current detection limits in the shallow groundwater at the site. VOC's that have been confirmed in the shallow groundwater are the following: trichloroethene; tetrachloroethene; 1,1,1 -trichloroethane; and 1,1, dichloroethane. Groundwater quality in the intermediate and deep permeable zones beneath the site is not currently monitored.
13. Based on groundwater and leachate elevation data, there appears to be a build-up of leachate within the landfill. There is currently no leachate control system in operation at the site.
14. The beneficial use of the shallow groundwater found in the surficial alluvial deposits at and around the landfill is to recharge the surface waters of South San Francisco Bay and contiguous waters. The beneficial uses of South San Francisco Bay and contiguous waters are as follows:
 - a. Wildlife habitat
 - b. Water contact recreation
 - c. Non-contact water recreation
 - d. Commercial and sport fishing
 - e. Preservation of rare and endangered species
 - f. Estuarine habitat
 - g. Fish migration and spawning
15. The present and potential beneficial uses of the deeper groundwater are as follows:
 - a. Domestic and municipal water supply
 - b. Industrial process water supply
 - c. Industrial service supply
 - d. Agricultural supply
16. Due to the presence of groundwater immediately beneath the landfill, the site does not meet the criteria contained in Section 2530(c) of Subchapter 15 that requires all existing landfills to be operated to ensure that wastes will be a minimum of five feet above the highest anticipated elevation of underlying groundwater.

17. The Board finds that it is infeasible to meet the requirement of Section 2530 (c) for already filled areas of the existing landfill, as it would be economically infeasible to remove the wastes already in place. The discharger will design and implement an engineered alternative to the five foot separation criteria pursuant to Section 2510 (b) of Subchapter 15, and as required by this Order.
18. The landfill is located in a seismically active area that is characterized by northwest-southeast trending, predominantly right-lateral, strike-slip faults. Faults which bear the most significance to the site are the San Andreas and Hayward faults, located approximately eleven miles southwest, and six miles northeast of the landfill, respectively. Both of these faults have been related to major historic ruptures and seismic creep. The Silver Creek Fault, located approximately 2 miles northeast of the northeast corner of the landfill, also represents a potential hazard to the site, but is associated with considerably less risk than the two aforementioned features.
19. The discharger submitted, as part of the Report of Waste Discharge, a report titled "Landfill Slope Stability Analysis", dated February 29, 1988. This report evaluated the stability of the landfill under both static and seismic loading. Based on the assumed properties and closure configurations, the study concluded that the landfill would be stable for static conditions. The deformation under seismic loading is anticipated to be up to three feet during the maximum probable earthquake. The potential for liquefaction of the foundation soils was described in the report as being minimal.
20. The landfill is located within the 100-year floodplain. The anticipated maximum elevation of the 100-year flood, in the event that either the East or West Sunnyvale Channel overflowed its banks, is estimated at seven feet, National Geodetic Vertical Datum. The 100-year, 24 hour precipitation event for the landfill is 3.6 inches.
21. A subsurface drain that currently services the landfill is buried beneath the landfill along the old alignment of Crossman Avenue. This drain is a sixty inch reinforced concrete pipe covered by a concrete cap capable of bearing a load of 3000 pounds per square inch. The pipe drains north from drop inlets at the intersection of Crossman Avenue and Caribbean Drive into a surface channel on the northern landfill perimeter due north of this intersection. The receiving channel is drained by the Baylands Pump Station.
22. The discharger submitted, in May, 1985, a proposed groundwater monitoring program pursuant to Article 5 of Subchapter 15. This proposal needs to be revised to reflect information regarding the site hydrogeology that has been accumulated since 1985.
23. The discharger submitted a closure plan for the landfill entitled "Operations and Closure Plan, City of Sunnyvale Sanitary Landfill", dated June 1986. This closure plan is no longer applicable due to changes in the proposed final landfill contours, and it does not address all requirements of Subchapter 15 for closure.

24. The discharger's ROWD has not provided for the following requirements of Subchapter 15:
 - a. The ROWD did not address the failure of the site to meet the five foot separation criteria of Subchapter 15.
 - b. The ROWD did not provide data necessary for establishing Water Quality Protection Standards (WQPS) and background water quality for the landfill.
 - c. The ROWD did not provide adequate documentation that the site is adequately protected from washout or inundation in the event of the 100-year flood.
25. This project constitutes a minor modification to land for the continued operation of an existing landfill, with changes to meet public health and safety standards, and is therefore categorically exempt from the provisions of the California Environmental Quality Control Act (CEQA) pursuant to Section 15301 of the Resources Agency Guidelines.
26. The Regional Board adopted a revised Water Quality Plan for the San Francisco Bay Basin on December 17, 1986 and this Order implements the water quality objectives stated in that plan.
27. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge, and has provided them with an opportunity to submit their written views and recommendations.
28. The Board in a public meeting heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the City of Sunnyvale and Oakland Scavenger Company, and any other persons that currently or in the future own this land or operate this facility, shall meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and shall also comply with the following (unless otherwise noted, any references to Sections and Articles refer to Subchapter 15 of Title 23):

A. PROHIBITIONS

1. The disposal of waste shall not create a pollution or nuisance as defined in Section 13050(1) and (m) of the California Water Code.
2. Wastes shall not be placed in or allowed to contact ponded water from any source whatsoever.
3. Wastes shall not be disposed of in any position where they can be carried from the disposal site and discharged into waters of the State or of the United States.
4. Hazardous and designated wastes as defined in Sections 2521 and 2522 of Subchapter 15, and high moisture content wastes (including sewage sludge with less than 50% solids, septic tank waste and wastes containing less than 50% solids) shall not be deposited or stored at this site.

5. The discharge to the landfill unit of solid waste containing free liquid or moisture in excess of the waste management unit's moisture holding capacity is prohibited.
6. The discharger shall not cause the following conditions to exist in waters of the State at any place outside the waste management facility:
 - a. Surface Waters
 1. Floating, suspended, or deposited macroscopic particulate matter or foam.
 2. Bottom deposits or aquatic growth.
 3. Alteration of temperature, turbidity, or apparent color beyond natural background levels.
 4. Visible, floating, suspended or deposited oil or other products of petroleum origin.
 5. Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.
 - b. Groundwater
 1. The groundwater shall not be degraded as a result of the waste disposal operations, pursuant to the State Water Resources Control Board Resolution No. 68-16, Statement of Policy With Respect to Maintaining High Quality of Waters in California.
7. Leachate from wastes and ponded water containing leachate or in contact with refuse shall not be discharged to waters of the State or the United States.
8. Wastes shall not be discharged into Fill Area H, subsequent to the proposed relocation of the 39 inch sanitary sewer line, or the West Sunnyvale Channel valley subsequent to the proposed relocation of this channel, until compliance with Section 2530 (c) has been demonstrated, or the discharger has demonstrated, pursuant to Section 2510 (c), that it is infeasible to meet the five foot separation criteria, and that an engineered alternative will provide equivalent protection of beneficial uses of waters of the State, all to the satisfaction of the Executive Officer.

B. SPECIFICATIONS

1. Water used during disposal operations shall be limited to a minimal amount necessary for dust control and fire suppression.
2. Surface drainage from tributary areas, and internal site drainage from surface and subsurface sources, shall not contact or percolate

through wastes during disposal operations or during the life of the site. Earthen drainage ditches constructed over refuse fill will be underlain with a minimum 5-foot thickness of compacted earthfill if over final covered areas and a minimum of 2-foot thickness of compacted earthfill if over interim covered areas.

3. The site shall be protected from any washout or erosion of wastes or covering material and from inundation which could occur as a result of a 100 year 24 hour precipitation event, or as the result of flooding with a return frequency of 100 years.
4. The discharger shall design and implement an engineered alternative to the five foot separation siting criteria specified in Section 2530 (c). This engineered alternative shall provide equivalent protection of beneficial uses of surface and groundwater.
5. The discharger shall ensure that the foundation of the site, the levees surrounding the site, the refuse fill, the structures which control leachate, surface drainage, erosion, and gas for this site are constructed and maintained to withstand conditions generated during the maximum probable earthquake.
6. The discharger shall operate a leachate monitoring and control system so as to minimize the build-up of leachate in the landfill. The leachate monitoring and control system shall be designed, maintained and operated to prevent the degradation of surface and ground water. This system shall be inspected weekly, and any accumulated fluid shall be removed. Measures shall be taken to ensure that leachate in the leachate collection system can flow freely into any collection sump. Measures shall also be taken to ensure that leachate collection sumps and extraction wells will remain operational during disposal operations, closure, and the post-closure maintenance period.
7. The discharger shall perform detection and verification monitoring programs at the landfill, and evaluate the need for corrective action pursuant to Article 5. The discharger shall install any additional ground water and leachate monitoring devices required to fulfill the terms of any Self-Monitoring Program issued to the discharger in order that the Board may evaluate compliance with the conditions of this Order.
8. The discharger shall operate the waste management unit so as not to cause a statistically significant difference to exist between water quality at the compliance points and the WQPS as outlined in Section 2552. The points of compliance will be established according to Section 2553 upon approval of a groundwater quality monitoring program. The discharger shall establish WQPS according to the requirements of this Order and Article 5. WQPS shall be considered for, at a minimum, the following constituents:
 - a. pH
 - b. Total Organic Carbon
 - c. Nitrate Nitrogen
 - d. Total Kjeldahl Nitrogen
 - e. Total Phenols

- f. Arsenic
 - g. Total Chromium
 - h. Copper
 - i. Nickel
 - j. Zinc
 - k. Lead
 - l. Aluminum
 - m. Barium
 - n. Iron
9. The landfill shall be provided with interim cover. Interim cover at landfills is daily cover, intermediate cover, or performance standards as defined by the California Waste Management Board. Working faces and interim cover shall be designed and constructed to minimize percolation of precipitation through wastes.
 10. As portions of the landfill are closed, the exterior surfaces shall be graded to a minimum slope of three percent in order to promote lateral runoff of precipitation. In addition, all completed disposal areas shall be covered with a minimum of 4 feet of cover and meet other applicable requirements as described in Article 8. Closure of the landfill shall be under the direct supervision of a California registered civil engineer or certified engineering geologist.
 11. Pursuant to Section 2580 (d), the discharger shall maintain two of the existing surveyed permanent monuments on or near the landfill from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout the post-closure maintenance period. Any new monuments shall be installed by a licensed land surveyor or registered civil engineer, and shall not be located in places affected by the landfill or where settlement or subsidence is expected.
 12. The discharger shall establish an irrevocable closure fund, pursuant to Section 2580 (f), that will provide sufficient funds to properly close each area of the landfill and for the post-closure monitoring and maintenance of the site. For the purposes of planning the amount of this fund the discharger shall assume a post-closure period of at least 30 years. The discharger shall provide an evaluation of closure and post closure monitoring and maintenance costs.
 13. A periodic load checking program shall be implemented to ensure that hazardous materials are not discharged at the landfill.
 14. The migration of methane gas from the landfill shall be controlled as necessary to prevent nuisance conditions or the impairment of beneficial uses of water.
 15. The discharger shall remove and relocate any wastes which are discharged at this site in violation of these requirements.

C. PROVISIONS

1. The discharger shall comply with all Prohibitions, Specifications, and Provisions of this Order immediately upon adoption of this Order, except as noted below.
2. The discharger shall submit, by January 15, 1990, a more detailed analysis of 100-year flood protection features at the landfill, in order to ensure compliance with Specification B.3. This analysis shall include an engineering analysis to indicate the various hydrodynamic and hydrostatic forces expected to result at the site as a consequence of a 100-year flood, and structural or other engineering studies showing the design of waste management units and flood protection devices at the facility and how these will prevent washout. This report shall include an assessment of alternative features which could be installed to augment the existing flood protection system.
3. The discharger shall submit, by August 1, 1990, a report which includes an evaluation of potential engineered alternatives to the five foot separation criteria, together with a rationale for a recommended alternative. The report required under Provision 6 may be included as part of this submittal. The discharger shall submit by January 15, 1991 detailed design plans for the engineered alternatives to be implemented. The discharger shall achieve compliance with Specification B.5 by November 1, 1991 according to the engineered alternative plan as approved by the Executive Officer.
4. The discharger shall submit, by July 1, 1990, a detailed inspection and corrective action plan to be implemented in the event of any earthquake generating ground shaking of Modified Mercalli Intensity V or greater at or near the landfill. The report shall describe the containment features, and groundwater monitoring and leachate control facilities potentially impacted by static and seismic deformations of the landfill. The plan shall provide for reporting results of the post earthquake inspection to the Regional Board within 18 hours of the occurrence of the earthquake. In the event of any damage due to liquefaction, or other slope failure, the corrective action plan shall be implemented immediately, and the Regional Board notified immediately.
5. The discharger shall submit, by July 1, 1990, a proposed plan for monitoring horizontal and vertical deformations of the landfill. This plan shall be implemented by October 1, 1990.
6. The discharger shall submit a detailed leachate management plan by August 1, 1990. This plan should evaluate the build-up of leachate within all portions of the landfill, quantity of leachate produced, storage of the leachate, ultimate disposal of the leachate, and various methodologies for removal of leachate. The report should evaluate the quantity of leachate that will have to be extracted to the maximum extent feasible from the leachate collection system in order to comply with Specification B.6. The plan should provide details of any proposed leachate storage facilities on site, and an evaluation of leachate disposal options. This plan shall provide for

an annual evaluation of leachate management at the site to be included with the annual Self-Monitoring Reports as described in the attached Monitoring and Reporting Program. This report shall include a representative evaluation of leachate quality which is based on chemical analysis of samples from all leachate sumps for parameters included in Section C.4.c.4 of the attached Self-Monitoring Program, and, at a minimum, the following: chemical oxygen demand, sulfate, sulfides, volatile organics and acid and base neutral extractables, antimony, cadmium, chromium IV, manganese, mercury, selenium, silver, and thallium.

7. The discharger shall submit work plans for the reports required by Provisions 3 and 6 by December 1, 1989, and status reports on the progress of the work by May 1, 1990. The work plans and status reports shall provide detail sufficient to ensure that adequate progress is being made towards preparation of the reports required by Provisions 3 and 6.
8. The discharger shall submit a proposed groundwater monitoring program pursuant to Article 5 by August 1, 1990. The report shall include a plan to establish background water quality and water quality protection standards. Water quality protection standards shall be proposed in a report to be submitted within fifteen months following implementation of a groundwater monitoring program approved by the Executive Officer. Standards shall be proposed for the constituents listed in Specification B.9 of this Order according to the requirements of Article 5 of Subchapter 15. If it is determined that the statistical comparison requirements of Article 5 are infeasible the report should include a proposal, pursuant to Section 2510(b) of Subchapter 15, for an alternative comparison procedure.
9. The discharger shall submit by September 1, 1989 a proposal for evaluating the horizontal and vertical extent of VOC's currently detected in shallow groundwater beneath the site. The proposed plans shall be implemented as approved by the Executive Officer and a report of the results submitted by August 1, 1990. This report shall include an evaluation of the need for corrective action.
10. The discharger shall submit, by August 1, 1990, a report assessing the nature of potential leachate migration through the sixty inch reinforced concrete drain pipe located beneath the refuse along the old alignment of Crossman Avenue. If a problem of such nature is apparent, the report shall include a proposal for corrective action.
11. The discharger shall submit, within 90 days after the closure of any portion of the landfill, a closure certification report that documents that the area has been closed according to the requirements of this Order and Subchapter 15.
12. The discharger shall notify the Board of units to be closed at least 30 days prior to beginning any partial or final closure activities. The notice shall include a statement that all closure activities will conform to the most recently approved closure plan and that the plan provides for site closure in compliance with all applicable federal and state regulations.

13. The discharger shall submit, by January 15, 1990, a revised closure plan for the site which will include, at a minimum, the following:
 - a. proposed final grades which are not to exceed a height of 111 feet NGVD, unless a higher elevation is approved in writing by the Executive Officer;
 - b. documentation of compliance with Specification B.12, or a time schedule for achieving compliance;
 - c. an estimated time schedule for closure of all portions of the landfill.
14. The discharger shall submit by September 1, 1989 a report describing a periodic load-checking program to be implemented by the discharger to ensure that hazardous and designated wastes are not discharged to the landfill.
15. The owner of the waste disposal site shall have the continuing responsibility to assure protection of usable waters from discharged wastes and gases and leachate generated by discharged waste during the active life, closure, and post-closure maintenance period of the waste management unit and during subsequent use of the property for other purposes.
16. The discharger shall maintain waste containment facilities and precipitation/drainage controls, and shall continue to monitor groundwater, leachate, and surface waters per the attached Monitoring and Reporting Program.
17. The discharger shall file with the Board quarterly self-monitoring reports performed according to any self-monitoring program issued by the Executive Officer.
18. All reports prepared pursuant to these Provisions shall be prepared under the supervision of a registered civil engineer or certified engineering geologist.
19. The discharger shall file with this Board a report of any material change or proposed change in the character, location, or quantity of this waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries of the disposal areas or the ownership of the site.
20. The discharger shall maintain a copy of this Order at the site so as to be available at all times to site operating personnel.
21. The discharger shall maintain legible records of the volume and type of each waste discharged at the waste management unit and the manner and location of discharge. Such records shall be maintained until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the Board and the State Water Resources Control Board at any time during normal business hours.

22. The Board considers the property owner and site operator to have continuing responsibility for correcting any problems which arise in the future as a result of this waste discharge or related operations.
23. The discharger shall maintain all devices or designed features installed in accordance with this Order such that they continue to operate as intended without interruption except as a result of failures which could not have been reasonably foreseen or prevented by the discharger.
24. The discharger shall permit the Board or its authorized representative, upon presentation of credentials:
 - a. Entry upon the premises on which wastes are located or in which any required records are kept.
 - b. Access to copy any records required to be kept under the terms and conditions of this Order.
 - c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this Order.
 - d. Sampling of any discharge or ground water covered by this Order.
25. The discharger shall notify the Board, in writing, of any proposed change in ownership or responsibility for construction or operation of the waste management units. The discharger shall also notify the Board of a material change in the character, location, or volume of the waste discharge and of any proposed expansions or closure plans. This notification shall be given 30 days prior to the effective date of the change and shall be accompanied by an amended report of waste discharge and any technical documents that are needed to demonstrate continued compliance with these WDR's.
26. The discharger shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or of precipitation and drainage control structures.
27. The discharger shall comply with all applicable provisions of Subchapter 15 that are not specifically referred to in this Order.
28. This Board's Order No. 78-3, and 81-14 are hereby rescinded.
29. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under federal, state or local laws; and do not authorize the discharge of wastes without appropriate permits from other agencies or organizations.

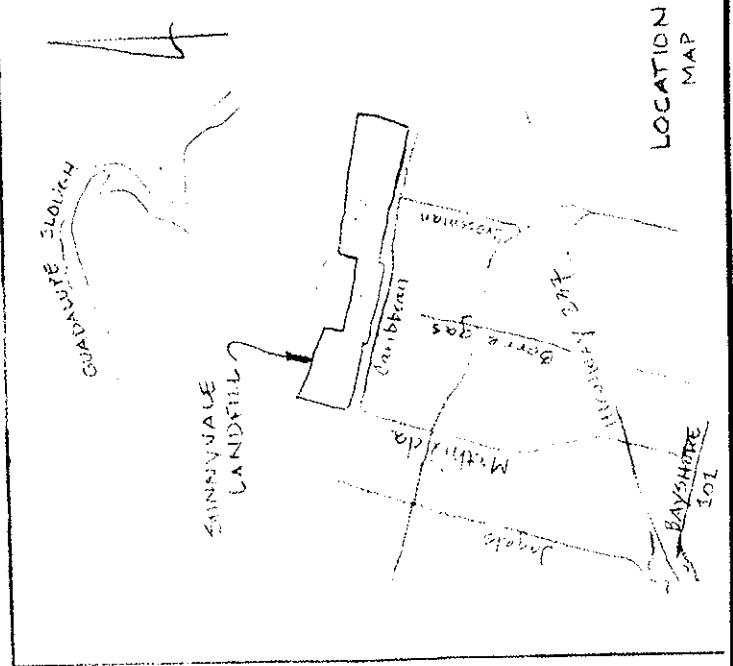
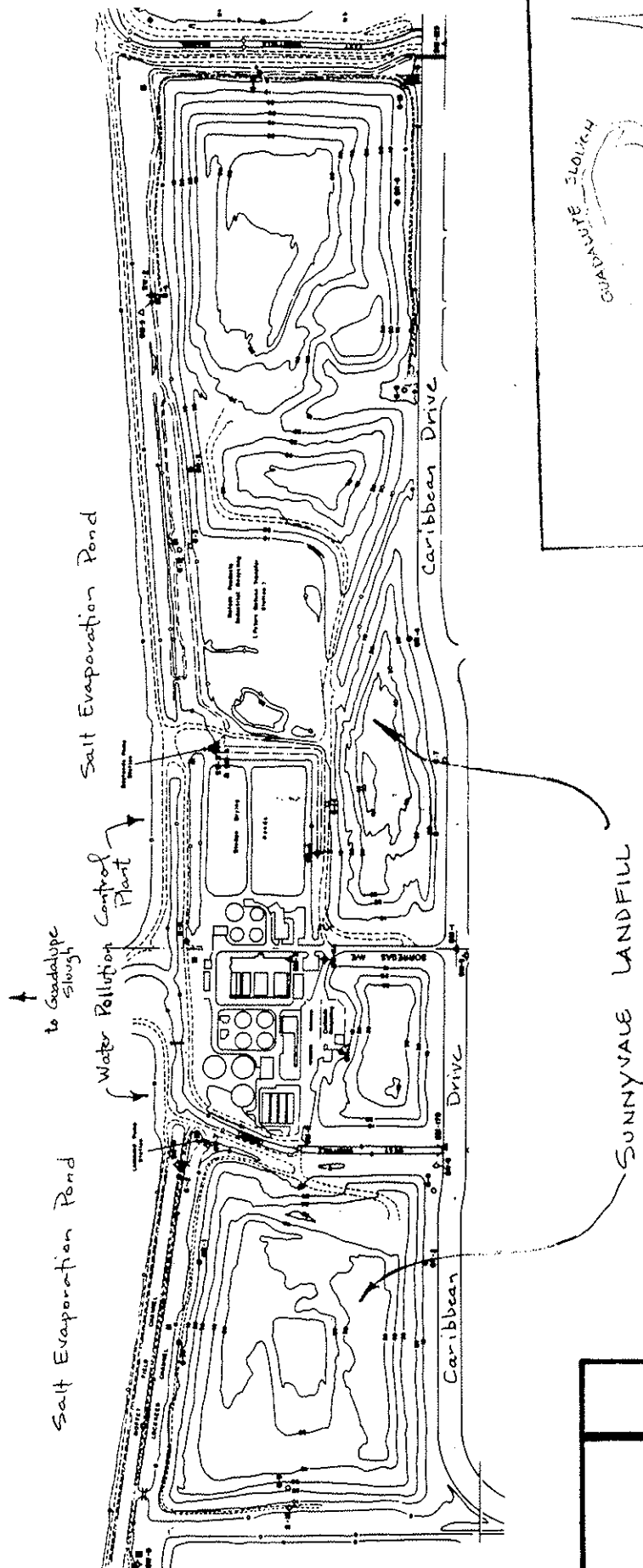
30. This Order is subject to Board review and updating, as necessary, to comply with changing State or Federal laws, regulations, policies, or guidelines; changes in the Board's Basin Plan; or changes in the discharge characteristics, in five year increments from the effective date of this Order.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on June 21, 1989.



Steven R. Ritchie
Executive Officer

Attachments: A) Site map
B) Self Monitoring Program



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ATTACHMENT A
CITY OF SUNNYVALE
CLASS III LANDFILL
SITE MAP

DRAWN BY: KRH DATE: May 18, 1989 DRWG. NO.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

CITY OF SUNNYVALE

SUNNYVALE LANDFILL

SUNNYVALE, SANTA CLARA COUNTY

ORDER NO. 89-105

CONSISTS OF

PART A

AND

PART B

PART A

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16. This Self-Monitoring Program is issued in accordance with Section C.17 of Regional Board Order No. 89-105.

The principal purposes of a self-monitoring program by a waste discharger are: (1) to document compliance with waste discharge requirements and prohibitions established by the Board, (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of effluent standards of performance, pretreatment and toxicity standards, and other standards, and (4) to prepare water and wastewater quality inventories.

B. SAMPLING AND ANALYTICAL METHODS

Sampling

Sample collection, storage, and analyses shall be performed according to most recent version of Standard Methods for the Analysis of Wastewater and in accordance with an approved sampling and analysis plan.

Water and waste analysis shall be performed by a laboratory approved for these analyses by the State Department of Health. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. DEFINITION OF TERMS

1. A grab sample is a discrete sample collected at any time.
2. A composite sample is a sample composed of individual grab samples mixed in proportions varying not more than plus or minus five percent from the instantaneous rate of waste flow corresponding to each grab sample collected at regular intervals not greater than one hour, or collected by the use of continuous automatic sampling devices capable of attaining the proportional accuracy stipulated above throughout the period of discharge or 24 consecutive hours, whichever is shorter.
3. Receiving waters refers to any water which actually or potentially receives surface or groundwaters which pass over, through, or under waste materials or contaminated soils. In this case the groundwater beneath and adjacent to the landfill, the surface runoff from the site, the drainage ditches surrounding the site, Lockheed Channel, Moffett Channel, West Sunnyvale Channel, and the East Sunnyvale Channel are considered to be the receiving waters.

4. Standard observations refer to:

a. Receiving Waters

- 1) Floating and suspended materials of waste origin: presence or absence, source, and size of affected area.
- 2) Discoloration and turbidity: description of color, source, and size of affected area.
- 3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
- 4) Evidence of beneficial use: presence of water associated wildlife
- 5) Flow rate.
- 6) Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.

b. Perimeter of the waste management unit.

- 1) Evidence of liquid leaving or entering the waste management unit, estimated size of affected area and flow rate. (Show affected area on map)
- 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
- 3) Evidence of erosion and/or daylighted refuse.

c. The waste management unit.

- 1) Evidence of ponded water at any point on the waste management facility.
- 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
- 3) Evidence of erosion and/or daylighted refuse.
- 4) Standard analysis and measurements refer to:
 - a. pH
 - b. Electrical Conductivity (EC)
 - c. Total Dissolved Solids (TDS)
 - d. Total Phenols
 - e. Total Organic Carbon
 - f. Nitrate Nitrogen
 - g. Total Kjeldahl Nitrogen
 - h. Water elevation in feet above NGVD
 - i. Settleable Solids, ml/l/hr
 - j. Turbidity, NTU

- k. Copper
- l. Nickel
- m. Zinc
- n. Lead
- o. Aluminum
- p. Barium
- q. Iron
- r. Arsenic
- s. Total Chromium
- t. EPA Method 601, identifying all peaks greater than 1 microgram/liter.

D. SCHEDULE OF SAMPLING, ANALYSIS, AND OBSERVATIONS

The discharger is required to perform sampling, analysis, and observations according to the schedule specified in Part B, and the requirements in Article 5 of Subchapter 15.

E. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the discharger, and shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

- 1. Identity of sample and sample station number.
- 2. Date and time of sampling.
- 3. Date and time that analyses are started and completed, and name of the personnel performing the analyses.
- 4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used. A reference to a specific section of a reference required in Part A Section B is satisfactory.
- 5. Calculation of results.
- 6. Results of analyses, and detection limits for each analyses.

F. REPORTS TO BE FILED WITH THE BOARD

- 1. Written self-monitoring reports shall be filed by the 15th day of the month following the report period. In addition an annual report shall be filed as indicated in F.2. The reports shall be comprised of the following:

- a. Letter of Transmittal

A letter transmitting the essential points in each self-monitoring report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the

violations, such as, operation and/or facilities modifications. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

- b. Each monitoring report shall include a compliance evaluation summary sheet. This sheet shall contain:
 - 1) The sample mean and the sample variance for all sample sets taken from all compliance points, and shall determine if the difference between the mean of each sample set and the water quality protection standard is significant at the 0.05 level using Cochran's Approximation to the Behrens-Fisher Student's t-test as described in Appendix II of Subchapter 15. The discharger may propose an alternative statistical procedure to be used in making this determination pursuant to Section 2555(h)(3) of Subchapter 15. If a statistically significant difference is found this shall be reported as a suspected requirement violation in the letter of transmittal.
 - 2) A graphic description of the velocity and direction of groundwater flow under/around the waste management unit, based upon the past and present water level elevations and pertinent visual observations.
 - 3) The method and time of water level measurement, the type of pump used for purging, pump placement in the well; method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature conductivity and turbidity testing, well recovery time, and method of disposing of the purge water.
 - 4) Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations; the chain of custody record.
- c. A map or aerial photograph shall accompany each report showing observation and monitoring station locations.
- d. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory

whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board.

- 1) The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review.
 - 2) In addition to the results of the analyses, laboratory quality control/quality assurance (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that is less than 80%; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.
- e. An evaluation of the effectiveness of the leachate monitoring/control facilities.
 - f. A summary and certification of completion of all standard observations for the waste management unit, the perimeter of the waste management unit, and the receiving waters.
 - g. The quantity and types of wastes disposed of during the past quarter, and the locations of the disposal operations.

2. CONTINGENCY REPORTING

- A. A report shall be made by telephone of any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Board within five days. This report shall contain the following information:
 - 1) a map showing the location(s) of discharge;
 - 2) approximate flow rate;
 - 3) nature of effects; i.e. all pertinent observations and analyses; and
 - 4) corrective measures underway or proposed.
- B. A report shall be made in writing to the Board within seven days if a statistically significant difference is found between a self-monitoring sample set and a WQPS. Notification shall indicate what WQPS(s) have been exceeded. The discharger shall immediately resample at the compliance point(s) where this difference has been found and analyze another sample set of at least four portions split in the laboratory from the source sample.
- C. If resampling and analysis confirms the earlier finding of a statistically significant difference between self-monitoring results and WQPS(s) the discharger must submit to the Board within 90 days an amended Report of Waste Discharge for establishment of

a verification monitoring program meeting the requirements of Section 2557 of Subchapter 15. This submittal shall include the information required in Section 2556(b)(2) of Subchapter 15.

- D. The discharger must notify the Board within seven days if the verification monitoring program finds a statistically significant difference between samples from the verification monitoring program point of compliance and the WQPS(s).
 - E. If such a difference or differences are found by the verification monitoring program, it will be concluded that the discharger is out of compliance with this Order. In this event the discharger shall submit within 180 days an amended Report of Waste Discharge requesting authorization to establish a corrective action program meeting the requirements of Section 2558 of Subchapter 15. This submittal shall include the information required in Section 2557(g)(3) of Subchapter 15.
 - F. According to Provision C.5, the facility shall supply a written report to the Regional Board within 30 days of the earthquake. The report shall contain the following information:
 - 1. a map showing the locations and nature of all damage;
 - 2. an indication of whether liquids were, or may have been released from the landfill;
 - 3. volume or rate of any release;
 - 4. nature of effects; i.e., all pertinent observations and analyses;
 - 5. implementation of the corrective action plan including the post-construction report of any repairs made.
3. By February 15 of each year the discharger shall submit an annual report to the Board covering the previous calendar year. This report shall contain:
- a. Tabular and graphical summaries of the monitoring data obtained during the previous year.
 - b. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements.
 - c. A map showing the area, if any, in which filling has been completed during the previous calendar year.
 - d. A written summary of the groundwater analyses indicating any change in the quality of the groundwater.
 - e. An evaluation of the effectiveness of the leachate monitoring/control facilities.
4. A boring log shall be submitted for each sampling well established for this monitoring program, as well as a report of inspection or certification that each well has been constructed in accordance with

the construction standards of the Santa Clara Valley Water District. These shall be submitted within 30 days after well installation.

Part B

1. DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS

A. WASTE MONITORING

1. Record the total volume and weight of refuse in cubic yards and tons disposed at the site during the month. Report this information quarterly.
2. Record the volume of fill completed, in cubic yards, showing locations and dimensions on a sketch or map. Report this information quarterly.

B. ON-SITE OBSERVATIONS

STATION	DESCRIPTION	OBSERVATIONS	FREQUENCY
V-1 thru V-'n'	Located on the waste disposal area as delineated by a 500 foot grid network.	Standard observations for the waste management unit.	Weekly
P-1 thru P-'n' (perimeter)	Located at equidistant intervals not exceeding 1000 feet around the perimeter of the waste management unit.	Standard observations for the perimeter.	Weekly

C. GROUND WATER MONITORING

STATION	DESCRIPTION	OBSERVATION	FREQUENCY
G-1 thru "G-n"	Ground water monitoring wells, as shown on the attached site map, including wells to be installed.	Standard analysis other than "j".	Once per quarter.

D. LEACHATE MONITORING

STATION	DESCRIPTION	OBSERVATION/ ANALYSIS	FREQUENCY
GR-1 thru "GR-n"	Leachate control facilities, as shown on the attached site map, including sumps and wells to be installed.	Depth of leachate built up at base of land-fill, and volume removed. Standard analysis other than "j".	Quarterly for depth and semi-annually for standard analysis.

E. SEEPAGE MONITORING

STATION	DESCRIPTION	OBSERVATION/ ANALYSIS	FREQUENCY
S-1 thru S-'n' (seepage)	At any point(s) at which seepage is found occurring from the waste management unit.	Standard observations for the perimeter, and standard analysis other than "i".	Daily until remedial action is taken and seepage ceases.
R-001 (receiving waters, upstream)	Located in receiving waters 200 feet upstream from the upper-most point of seepage discharge(s).	Standard observation for receiving waters and standard analysis other than "i".	Daily, during a seepage event.
R-002 (receiving waters, downstream)	Located in receiving waters 200 feet downstream of seepage discharge(s).	Same as receiving waters upstream.	Daily during a seepage event.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedures set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order No. 89-105.

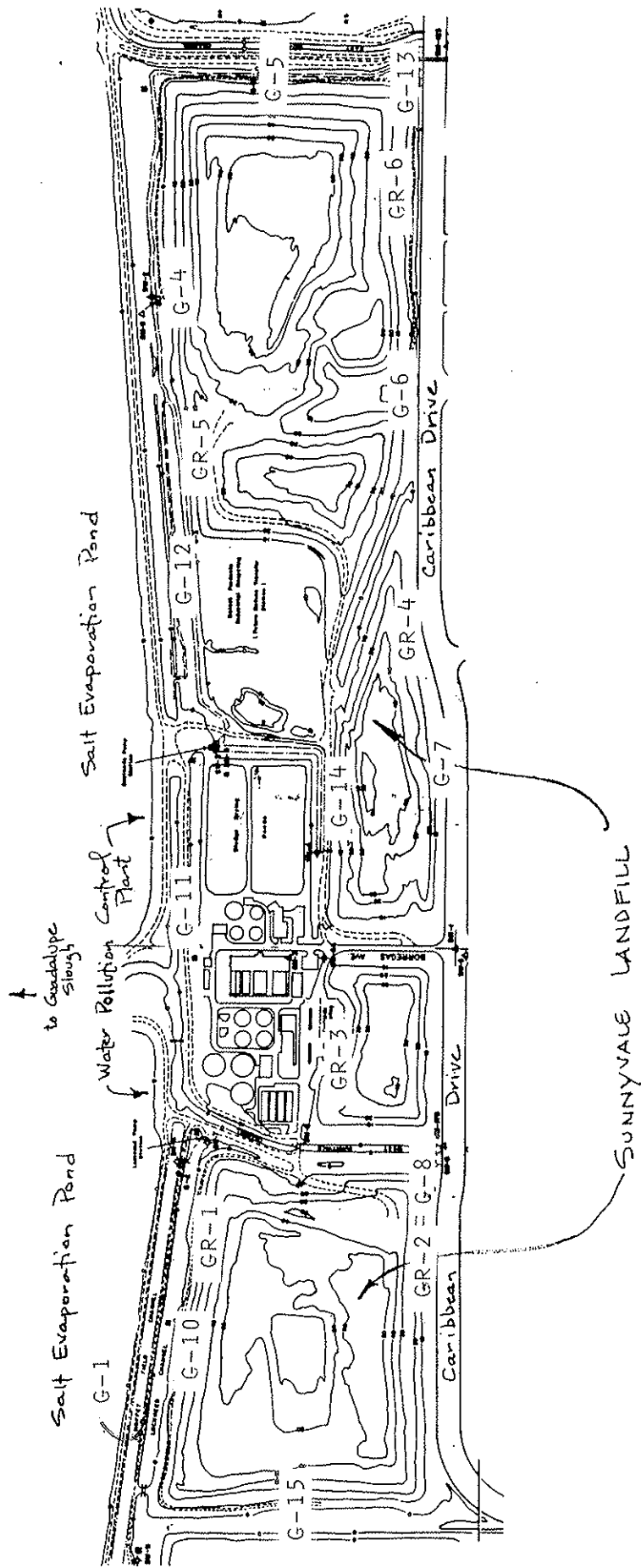
2. Is effective on the date shown below.
3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer, or request from the discharger.



Steven R. Ritchie
Executive Officer

6/21/89
Date Ordered

Attachment: Monitoring Point Map



EXPLANATION

- G-X Groundwater Monitoring Location
- GR-X Leachate Monitoring Location

MONITORING LOCATION MAP City of Sunnyvale Sanitary Landfill